

Ser. No. 10/645,213  
Amdt. dated June 21, 2005  
Reply to Office action of January 21, 2005

PFO20102

**Amendments to the Drawings**

The attached sheet of drawings includes the addition of Figures 5A and 5B. This sheet, which includes Fig. 1, 2A, 2B, 5A and 5B replaces the original sheet including Fig. 1, 2A, and 2B. The addition of Figures 5A and 5B adds no new matter to the application.

Attachment:           Replacement Sheet 1  
                  Annotated Sheet Showing Changes

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### Remarks/Arguments

#### The Invention Abstract

The Examiner has objected to the abstract of the invention for including reference characters which are not enclosed with parentheses. These reference characters have been deleted from the abstract.

The Examiner has objected to the abstract of the invention for including the text "Fig. 1." This text has been deleted from the abstract. It is submitted that the examiner's objection to the abstract has been overcome and the abstract is now in compliance with MPEP § 608.01(b).

#### Claim Objections

The claim objections raised by the Examiner in points 5-8 have been addressed in the amended claims as recommended by the examiner. It is submitted that the claim objections have now been overcome and the claims are now in compliance.

#### 35 U.S.C. §102

Claims 1-4 stand rejected under 35 U.S.C. §102(b) as being anticipated by Mongia et al. (IEEE, VOL. 45, NO. 9, September 1997).

The present invention recites a dielectric resonator " wherein the dielectric resonator is positioned at a distance  $x$  from at least one of the edges of the earth plane,  $x$  being chosen such that  $0 \leq x \leq \lambda_{\text{diel}}/2$ " as recited in amended claim 1. The present invention recited by claim 1 relates to a specific positioning of a DRA on a substrate comprising an earth plane or ground plane to widen the frequency band wide. (page 3 – line 15 and following) What is of importance in the present invention is the distance  $X$  top,  $X$  right,  $X$  left,  $X$  bottom between the DRA and the edges of the earth plane. In fact, the DRA is not positioned in the centre of the earth plane but in a position such that at least one of the distance  $X$  ( $X$  top,  $X$  right,  $X$  left,  $X$  bottom) is chosen such that  $0 \leq x \leq \lambda_{\text{diel}}/2$ . With this specific position, a wideband DRA antenna is obtained as shown in table 1.

It is submitted that Mongia et al (IEEE, vol 45, No. 9 September 1997) does not teach or suggest a dielectric resonator " wherein the dielectric resonator is positioned at a distance  $x$  from at least one of the edges of the earth plane,  $x$  being chosen such that  $0 \leq x \leq \lambda_{\text{diel}}/2$ " as recited in amended claim 1. The Mongia article is a general academic article on

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rectangular DRA. In this article the modes of operations, the dimensions and the various feeds of a rectangular DRA are explained.

The examiner refers to pp 1354 and Fig. 4 to show that the distance  $x$  is described in Mongia. In this part, the dimensions are "a" and "d" which are the dimensions of the DRA itself (see for example figure 4). It is also mentioned that to improve the coupling between the DRA and the microstrip line, the DRA is placed at an integral multiples of  $lg/2$  from the open end of the microstrip line. However, there is no mention at all of a distance such as the distance  $x$  top,  $x$  right,  $x$  left and  $x$  bottom. Mongia does not teach or suggest positioning the dielectric resonator between 0 and  $1/2 \lambda_{\text{diel}}$  from at least one of the edges of the earth plane to widen the passband, as recited in amended claim 1.

In light of the above argument and amendment, it is submitted that claim 1 is allowable over Mongia and such action is respectfully requested. Since claims 2-4 are dependant from allowable claim 1, it is submitted that they to are allowable for at least the same reasons that claim 1 is allowable, and such action is respectfully requested.

#### In the Drawings

The Examiner has objected to the drawings under 37 CFR 1.83(a) as not showing all the features of the invention specified in the claims. Figures 5A and 5B have been added to show the features claimed in claim 4. These figures are fully supported by claim 4 and the paragraph beginning at page 5, line 14. No new matter has been added.

It is submitted that the drawings are compliant under 37 CFR 1.121(d) and are in condition for allowance and such action is respectfully requested.

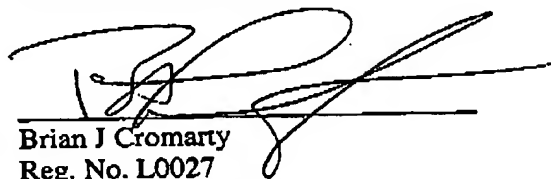
Having fully addressed the Examiner's rejections it is believed that, in view of the preceding amendments and remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the applicant's representative at (609) 734-6804, so that a mutually convenient date and time for a telephonic interview may be scheduled.

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No fee is believed due. However, if a fee is due, please charge the additional fee to  
Deposit Account 07-0832.

Respectfully submitted,



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ANNOTATED SHEET SHOWING CHANGES

1/2

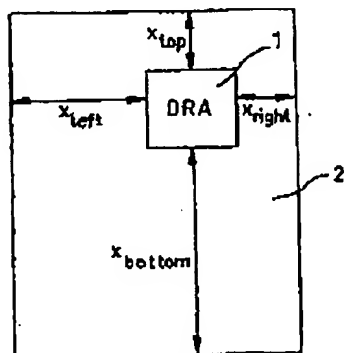


FIG. 1

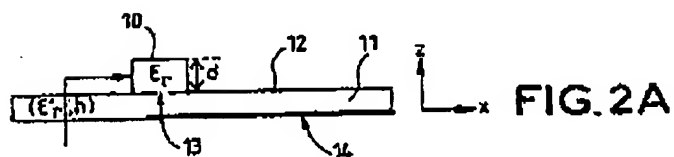


FIG. 2A

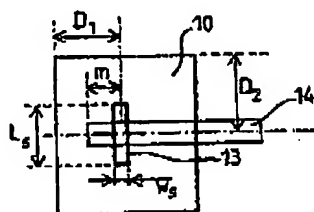
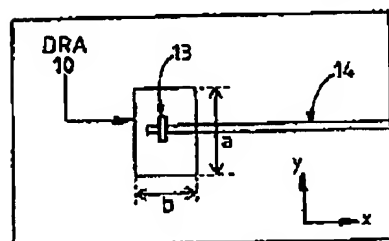


FIG. 2B

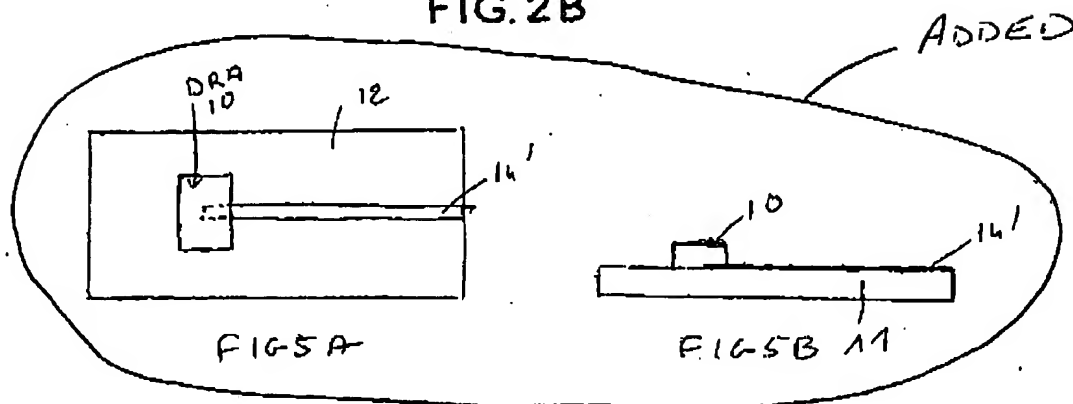


FIG. 5A

FIG. 5B